

PATENT COOPERATION TREATY

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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

15 NOV 2005

Applicant's or agent's file reference P 20170 PC 00	FOR FURTHER ACTION See Form PCT/IPEA/416	
International application No. PCT/NO20030/00283	International filing date (day/month/year) 18.08.2003	Priority date (day/month/year) 19.08.2002
International Patent Classification (IPC) or national classification and IPC F16L 19/02, 55/00, B25B 27/16, E21B 17/02		
Applicant Marine Direct Consultants Ltd et al		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 4 sheets, including this cover sheet.

3. This report is also accompanied by ANNEXES, comprising:

a. (*sent to the applicant and to the International Bureau*) a total of 2 sheets, as follows:

sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).

sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.

b. (*sent to the International Bureau only*) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

<input checked="" type="checkbox"/>	Box No. I	Basis of the report
<input type="checkbox"/>	Box No. II	Priority
<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
<input type="checkbox"/>	Box No. IV	Lack of unity of invention
<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
<input type="checkbox"/>	Box No. VI	Certain documents cited
<input type="checkbox"/>	Box No. VII	Certain defects in the international application
<input checked="" type="checkbox"/>	Box No. VIII	Certain observations on the international application

Date of submission of the demand 11.03.2004	Date of completion of this report 03.11.2004
Name and mailing address of the IPEA/SE Patent- och registreringsverket Box 5055 S-102 42 STOCKHOLM Facsimile No. +46 8 667 72 88	Authorized officer Malin Hallmén / JA A Telephone No. +46 8 782 25 00

Form PCT/IPEA/409 (cover sheet) (January 2004)

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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/NO20030/00283

Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

This report is based on a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of:

- international search (under Rules 12.3 and 23.1(b))
- publication of the international application (under Rule 12.4)
- international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on (replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):

the international application as originally filed/furnished

the description:

pages 1 - 12 as originally filed/furnished

pages* _____ received by this Authority on _____

pages* _____ received by this Authority on _____

the claims:

pages _____ as originally filed/furnished

pages* _____ as amended (together with any statement) under Article 19

pages* 1 - 2 received by this Authority on 27.10.2004

pages* _____ received by this Authority on _____

the drawings:

pages 1 - 10 as originally filed/furnished

pages* _____ received by this Authority on _____

pages* _____ received by this Authority on _____

a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. The amendments have resulted in the cancellation of:

the description, pages _____

the claims, Nos. _____

the drawings, sheets/figs _____

the sequence listing (specify): _____

any table(s) related to the sequence listing (specify): _____

4. This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

the description, pages _____

the claims, Nos. _____

the drawings, sheets/figs _____

the sequence listing (specify): _____

any table(s) related to the sequence listing (specify): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

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Box No. V **Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Claims	<u>1 - 9</u>	YES
	Claims	_____	NO
Inventive step (IS)	Claims	<u>1 - 9</u>	YES
	Claims	_____	NO
Industrial applicability (IA)	Claims	<u>1 - 9</u>	YES
	Claims	_____	NO

2. Citations and explanations (Rule 70.7)**Cited documents:**

D1: US4012059 A
 D2: US4093281 A
 D3: US4153281 A
 D4: GB707988 A
 D5: US3353847 A

Documents D1-D3 each discloses pipe connections using tools for loading the connections. The claimed invention differs from the cited documents D1-D3 in that the preloading tool generates a pressure directed compressingly towards the pipes end portions to preload the seal, the pressure being retained by a corresponding threaded nut and collar after removal of the preloading tool. Therefore, documents D1-D3 are only a background art document.

The documents D4-D5 cited in the International Search Report also represent the prior art. The claimed invention is not considered to be anticipated by these documents.

None of the cited documents, taken alone or in combination, reveals the invention defined in claims 1-9. Furthermore, in the cited documents there are no suggestions leading a person skilled in the art towards the invention defined by claims 1-9. Consequently the invention is novel and is considered to involve an inventive step and to be industrially applicable.

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Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

Claim 4 can not be referred to claim 1 and 2 because it comprises characteristic written in definite form, "the threaded collar's", not defined in claim 1 and 2.

Patent application no.

PCT/NO03/00283

Applicant

Marine Direct Consultants Ltd.

Date

Oktober 27, 2004

PCT/NO2003/000283

27-10-2004

A m e n d e d c l a i m s

1. A means of connecting pipes, comprising a seal (2), flanges (3, 3'), a threaded portion (17) and a nut (5), characterised in that the end portion (1, 1') of the pipe is equipped with a concentric press surface (23) located immediately proximal to the periphery of the pipe (1, 1') and designed to be capable of taking an axial pressure from a preloading tool (25), the pressure directed compressingly towards the pipes' (1, 1') end portions, which pressure is distributed evenly or point-by-point about the periphery of the pipe and sufficient to preload the seal (2), the preload of the seal (2) principally being retained by a corresponding threaded nut (5) and collar (15) after removal of the preloading tool (25).
2. A means in accordance with Claim 1, characterised in that the nut (5) has a flange (10) designed to be able to take an axial pressure from the preloading tool (25), which pressure is distributed evenly or point-by-point about the periphery of the nut (5) and directed towards the pipe flange (3).
3. A means in accordance with Claim 1, characterised in that a threaded collar's (15) rear portion (19) is designed to be able to take an axial pressure from the preloading tool (25), which pressure is distributed evenly or point-by-point about the periphery of the collar (15) and directed towards the pipe flange (3').
4. A means in accordance with one or more of the previous claims, characterised in that the

threaded collar's (15) rear portion (19) has a toothed periphery.

5. A means in accordance with one or more of the previous Claims, characterised in that the nut's (5) rear portion (7) has a toothed periphery.

6. A means of compressing pipe couplings comprising two concentric press surfaces (10, 23) designed to be capable of supporting an axial pressure sufficient to preload a seal (2), characterised in that a preloading tool (25) is designed to compress the end portions of the pipes (1, 1'), further comprising two end sections (27, 31) connected to two or more rods (35), each rod (35) being equipped with a hydraulic cylinder (37), the preload on the seal (2) principally being retained by a corresponding threaded nut (5) and collar (15) after removal of the preloading tool (25).

10 7. A means in accordance with Claim 6, characterised in that the preloading tool (25) is comprising a nut runner (45).

15 8. A means in accordance with Claim 6, characterised in that the nut runner (45) is equipped with a cogwheel (49) allocated to the rotation of a threaded collar (15) with a toothed periphery of the rear portion (19).

20 9. A means in accordance with Claim 6, characterised in that the nut runner (45) is equipped with a cogwheel (49) allocated to the rotation of a nut (5) with a toothed periphery of the rear portion (7).